Space Weather Forecast

Issued on Sunday, 06 February 2022 at 13:30 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of Moderate flares throughout. Reducing chance of Minor Geomagnetic Storm activity.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: There are five active regions on the visible disc. The largest region in the northeast quadrant is the most active, producing a number of low energy C-class flares. A region near the north-centre disc is also large, but appears relatively stable. The remaining regions appear to be stable and inactive. A large region which rotated across the western limb in the last 24 hours is still producing flares that can be detected at Earth. No Earth directed CMEs (coronal mass ejections) have been observed on available imagery.

Solar Wind / Geomagnetic Activity: The solar wind has been mainly elevated throughout due to a solar fast wind. Magnetic field strength was mainly weak, as was the important north-south component. Geomagnetic activity was Quiet to Unsettled.

Energetic Particles / Solar Radiation: The count of energetic particles (high energy protons) was at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary
Solar Activity: Solar activity is expected to be very low, with two large regions in the northern hemisphere likely to be the most significant source of flare activity.

Solar Wind / Geomagnetic Activity: No CMEs are expected through the forecast period. Solar winds are expected to remain elevated through much of the forecast period due to a persistent fast solar wind, perhaps starting to decline on 09 February. Geomagnetic activity is expected to be mainly Quiet to Unsettled, with a slight chance of G1/Minor Storms, especially on 06 February.

Energetic Particles / Solar Radiation: The count of energetic particles (high energy protons) is forecast to remain at background levels whilst the current sunspots remain quiet and stable, with no radiation storms currently expected.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	20	10	10	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	30	30	30	30
Very Active	R3 to R5 X	No	2	2	2	2

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	2	2	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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